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Relative Sizes of Age Cohorts and Labor Force Participation of Older Workers

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The Baby Boom and other, less-dramatic fluctuations in the sizes of birth cohorts generate substantial shifts in the relative sizes of older versus younger cohorts or workers. The usual hypothesis is that a large cohort generates “cohort crowding,” increasing the relative supply of workers in that cohort, which depresses their wages, leading to lower employment and lower labor force participation (LFP) because the lower wage induces fewer people to work.

Population aging implies larger relative sizes of older cohorts. The “cohort crowding” or “relative supply” hypothesis would imply that as older cohorts grow in relative size, employment and LFP rates will decline. Future employment rates of older individuals are important determinants of Social Security’s financial solvency, mainly because higher employment implies a continued inflow of Social Security payroll taxes. For example, assumptions about LFP by age play a key role in the 2016 annual report of the federal OASDI and DI trust funds. More controversially, perceptions about the appropriate earliest age of eligibility for claiming Social Security benefits, and the adequacy of benefit levels at that age, hinge in part on employment prospects of individuals at those ages. Thus, knowing what changing demographic structure implies for the likelihood of employment at older ages can inform our understanding of Social Security’s financial solvency, and of policies that might be adopted to strengthen it.

Our focus in this paper is on older workers — in particular, the effects of older cohorts’ sizes on their labor force participation (LFP) and wages. We concentrate on estimating effects among 50 to 59 year olds and 60 to 69 year olds. These are the age ranges in which labor force participation first starts to decline, and then when most people retire. The 60 to 69 age range, in particular, is the age range in which — in light of population aging — policymakers are trying to increase employment, often through reforms to public pension systems. Moreover, this is an age range in which policy may have considerable scope for increasing LFP because of low LFP rates.

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In the standard relative supply framework usually applied to relative cohort size, we would expect larger older cohorts to experience lower wages and hence lower employment or LFP. However, there are two reasons that we might find a positive effect. First, we might expect the population's age structure to affect the composition of consumption and labor demand. It is possible that the age structure of employment is such that relative labor demand for an age cohort increases when the relative size of that cohort increases; for example, an aging population will have rising health care demands, which could interact with an aging health workforce.

Second, a relative cohort size measure is just that — a relative measure. Thus, an increase, say, in the size of the 60 to 69 year old cohort relative to the population means that the older cohort is large relative to at least some other narrowly-defined age cohorts. For example, if older workers are quite substitutable for workers in the prime/middle-aged cohort, we might find this positive demand response for the size of the older cohort relative to this cohort.

We explore the effects of age cohorts' relative sizes on LFP and wages, focusing on older individuals. We use long-term data on cohort size and cohort labor force participation rates and wages over many decades, exploiting variation across states in a panel data setting that controls for other influences on older workers' employment. We pay careful attention to the endogeneity of the contemporaneous age structure of a state's potential workforce, which can make it difficult to estimate the causal effect of relative cohort size. For example, in retirement-destination states (e.g., Florida and Arizona), we might find large older cohorts, but low employment and LFP rates not because of cohort crowding, but because retirees have moved there. We address this problem by isolating exogenous variation in relative cohort size driven by historical birth patterns.

We find that when the older cohort is large relative to a younger cohort (ages 16 to 24), the evidence is consistent with the relative supply hypothesis, with a larger relative older cohort reducing LFP and wages. But when the older cohorts are large relative to the cohort of 25 to 49 year olds, LFP of older workers is higher, and it is less clear that wages are affected.

These results for the size of older cohorts relative to prime-aged cohorts are more consistent with a relative demand shift. When prime-aged workers are scarce relative to older workers, firms may try to retain or hire older workers. Older workers' extensive margin labor supply elasticity (i.e., their employment or LFP response) may be quite high. Moreover, older workers often enter into different jobs or employment relationships with more flexible, lower-paying work. There is some evidence from part-time work and self-employment data that the increase in older workers' LFP when their cohort is large relative to the 25- to 49-year-old cohort comes via self-employment or part-time work.

Together, the results suggest that cohort size may have important implications for the LFP (and wages) of older workers. However, our evidence suggests that we need a more nuanced view than simply whether the older cohort is large relative to the population: The cohort they are large relative to matters. This kind of evidence may influence projections of the older population's future employment rates in the United States.

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